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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,654	03/08/2001	Tranh To Nguyen	NPH-001	7519
53830	7590	10/20/2006	EXAMINER	
KOKKA & HSU, PC 1001 N. RENGSTORFF AVE. SUITE 250 MOUNTAIN VIEW, CA 94043-1748			SHINGLETON, MICHAEL B	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/802,654	NGUYEN, TRANH TO	
	Examiner	Art Unit	
	m 5	1223	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-23 and 40-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-23 and 40-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims like claim 40-42 have been withdrawn from consideration for these claims are directed to the non-elected invention(s). Note specifically, the elected invention 11 and 11B does not include a ground reference in the secondary windings.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 21-23 and 43-45 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Dornfeld 6,646,548 (Dornfeld).

Figure 8 and the relevant text of Dornfeld discloses a high efficiency amplifier arrangement having a input signal AUDIO and means UC3637 for digitally processing electric power from a direct current supply 15VDC so as to supply the digital signals thereof to a loudspeaker thereby applying at least some of the electric power from the direct current supply to the loudspeaker. (Note that with respect to claim 21, the UC3637 that provides the digital signal to drive the switches Q1, Q4, Q9 and Q11 could also be read as the direct current supply where the electric power from this DC supply is digitally processed to the loudspeaker.) The transformer T2 forms a first power-transferring transformer that is part of a first transformer isolated switching power converter, which also includes the bi-directional switch structures Q4 and Q9. The arrangement of Dornfeld is silent on which side of the loudspeaker is the positive terminal. However being that the arrangement of Dornfeld is symmetrical because of the full bridge arrangement, therefore either side of the loudspeaker could be considered the positive terminal. With the right-hand side being considered the positive terminal then the bi-directional switches of the first

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transformer isolated switching power converter is for supplying a first voltage proportional to the reference input signal to the positive terminal of the loudspeaker when the amplitude of the reference input signal is positive. Note that likewise if the left-hand terminal of the loudspeaker is considered the positive terminal then the converter that has the switches Q1 and Q11 would be for supplying a first voltage proportional to the reference input signal when the amplitude of the reference input signal is positive. The transformer T3 forms a second power-transferring transformer that is part of a second transformer isolated switching power converter. The second transformer isolated switching power converter also includes the bi-directional switch structure Q1 and Q11. Taking the convention that the right-hand side of the loudspeaker 14 of Dornfeld is the positive terminal of the loudspeaker the bi-directional switches of the second transformer isolated switching power converter is for supplying a second voltage proportional to the reference input signal to the negative terminal of the loudspeaker when the amplitude of the reference input signal is negative. The UC3637 IC is part of a PWM controller that controls the operation of the bi-directional switches of the two above-mentioned converters. The alternative nature of the full bridge arrangement insures that the first transformer isolated switching power converter is active during the positive portion of the reference input signal and because of the diodes in the bi-directional switches this ensure that the both the first and second switching power converter can provide for a return path for the first and second transformer isolated converters current to and from the loudspeaker. Note that Figure 8 of Dornfeld are clearly metal-oxide-semiconductor field-effect transistors otherwise commonly known as MOSFETs.

With respect to claims like claim 43, the voltage associated with the DC supply i.e. the 15 volts DC is modulated by the Audio signal through the pwm UC3637 and is transmitted to the loudspeaker through the first and second power transferring transformers T2 and T3 without being converted into a direct current voltage.

With respect to claims like claims 44 and 45 here claim 44 recites the first power-transferring transformer is configured to "electrically isolate" the first transformer-isolated switching power converter from the second transformer-isolated switching power converter and claim 45 recites that the second power-transferring transformer is configured to electrically isolate the second transformer-isolated switching power converter from the first transformer-isolated switching power converter. The two transformers T2 and T3 of Dornfeld do not have a galvanic connected between their primaries and their secondaries and thus they provide the claimed electrical isolation as recited above. Note that the two

DETAILED ACTION

The same reasoning as applied in the rejection dated March 17, 2006 and the following.

The only change is that claims 46 and 47 are also rejected under Dornfeld in that the rejection dated March 17, 2006 clearly has the six transistors or bidirectional switched and the pwm and the two transformers. The term connected is very broad in that these elements are all connected to each other either directly or indirectly in Dornfeld.

Applicant's arguments filed 08-08-2006 have been fully considered but they are not persuasive. Applicant's argument is that Dornfeld cannot provide a return path because the alternative MOSFETs are turned off. It appears that applicant is reading the claim language too narrowly for the claims do not require the return path be present during the entire time the selected switching converter is active. A fair and reasonable reading would only require that the return path be present during some time when the selected switching converter is active. Such is the case with the prior art. When the one selected switching converter is being turned on, the other switching converter is being turned off. Since the speaker in the prior art is an inductive element, current will continue to flow through the MOSFET being turned off even while the other converter is active. Note that it takes time for a transistor to turn on. It may be a short time period but the claims do not specify exactly the length of time the return path is to be present. Furthermore the capacitor and the resistor R25 could be considered to be a part of the bi-directional switch and these elements can clearly provide a return path for the entire period.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571) 272-1770.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal, can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 and after July 15, 2005 the fax number will be 571-273-8300. Note that old fax number (703-872-9306) will be service until September 15, 2005.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael B. Shingleton
MICHAEL B. SHINGLETON
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